

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-14: (Canceled).

15. A torque motor, comprising: an annular rotor; and an annular stator, the stator including a stator frame with iron cores and electrical windings arranged thereon, the iron cores and the electrical windings are arranged in at least one independent stator segment so that each stator segment is independently operable, each stator segment having its own housing, in which the segment's iron core and the segment's electrical winding are installed, each stator segment being configured to occupy a predetermined angular segment $\leq 180^\circ$ in the stator frame, each stator segment being detachably joined to the stator frame so that the segment can be installed and removed independently of other stator segments without damaging its electrical winding or the stator frame.

16. The torque motor in accordance with Claim 15, where the stator includes a number of stator segments so that each stator segment occupies an angular segment $\leq 45^\circ$ in the stator frame.

17. The torque motor in accordance with Claim 15, wherein the annular rotor includes a rotor frame and permanent magnets mounted on the rotor frame.

18. The torque motor in accordance with Claim 15, wherein the stator includes several stator segments, and further comprising electrical connecting elements that electrically connect the electrical windings of the several stator segments to one another, the electrical connecting elements being arranged to run between the stator segments and being detachably connected.

19. The torque motor in accordance with Claim 15, wherein the stator frame includes a lower stator ring and an upper stator ring, between which the at least one stator segment is positioned.

20. The torque motor in accordance with Claim 19, and further comprising several frame webs arranged to run between the lower stator ring and the upper stator ring essentially vertically to the stator rings, the stator segment being mounted to the webs.

21. The torque motor in accordance with Claim 20, wherein lateral faces of the frame webs lie on different radial planes of the stator and are angled relative to one another.

22. The torque motor in accordance with Claim 21, wherein the frame webs have different thicknesses between similar stator segments, so that a distance between adjacent stator segments is adjustable.

23. The torque motor in accordance with Claim 15, wherein several similar stator segments are provided so as to form a closed annular stator.

24. The torque motor in accordance with Claim 15, wherein the motor is a three-phase AC synchronous motor, in which the electrical windings form three coils in each stator segment, which windings are coupled with associated coils of other stator segments.

25. The torque motor in accordance with Claim 15, and further comprising a heat sink, which has at least one flow channel through which a coolant can flow, mounted on each stator segment.

26. The torque motor in accordance with Claim 25, and further comprising detachable channel connectors arranged to connect the flow channels of adjacent stator segments with one another in series.

27. The torque motor in accordance with Claim 15, and further comprising a temperature sensor installed in each stator segment to monitor temperature of the electrical winding in the respective stator segment.

28. The torque motor in accordance with Claim 15, wherein the stator is configured to encompass the rotor as an outer ring, and further comprising a bearing installed between the stator and the rotor, and a measuring system integrated in the torque motor for determining relative position of the rotor and the stator.